

Application Number 10/617,627
Responsive to Office Action mailed February 15, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A method ~~of detecting errors in transferred data~~ comprising steps of:

~~receiving transferred data having an error detection code with a first symbol size and an error correction code having a second symbol size different from the first symbol size appended to user data;~~

calculating a transformed error detection code syndrome and a recomputed transformed error detection code syndrome from data having an error detection code appended to user data;

~~calculating a recomputed error detection code syndrome;~~

comparing the recomputed transformed error detection code syndrome to the transformed error detection code syndrome; and

if the recomputed transformed error detection code syndrome corresponds to the transformed error detection code syndrome, transferring the data ~~to a host~~.

Claim 2 (Original): The method of claim 1 further comprising steps of:

if the recomputed transformed error detection code syndrome does not correspond to the transformed error detection code syndrome, receiving the data again.

Claim 3 (Original): The method of claim 1, wherein the transformed error detection code syndrome recomputation step comprises steps of:

computing a correction pattern using a Chien search in conjunction with Forney's algorithm.

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Claim 4 (Original): The method of claim 1, wherein the transformed error detection code syndrome calculating step comprises steps of:

- generating an error detection code multiplier;
- generating a non-transformed error detection code syndrome; and
- multiplying the error detection code multiplier by the non-transformed error detection code syndrome.

Claim [[6]]5 (Currently Amended): The method of claim 1 wherein the step of calculating a recomputed transformed error detection code syndrome is performed only if the transformed EDC syndrome is nonzero.

Claim [[7]]6 (Currently Amended): The method of claim [[6]]5 wherein if the transformed EDC syndrome is zero, then the transmitted data is transmitted to the host.

Claim [[8]]7 (Currently Amended): A method of detecting an error in error correction code (ECC) interleave encoded data comprising steps of:

- receiving ECC interleave encoded data;
- transforming the data in a transformed error detection code (EDC) syndrome generator into a transformed error detection code syndrome;
- receiving the ECC interleave encoded data in a recomputed transformed error detection syndrome generator;
- generating a recomputed transformed error detection syndrome associated with a computed correction pattern in the ECC interleave encoded data; and
- comparing the transformed EDC syndrome with the recomputed transformed error detection syndrome.

Claim [[9]]8 (Currently Amended): The method of claim [[8]]7 further comprising a step of:

- locating errors either in the received data using an error locator; and
- correcting errors in the received data using an error evaluator.

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Claim [[10]]9 (Currently Amended): The method of claim [[9]]8 wherein the locating step comprises performing a Chien search using the received data and the evaluating step comprises performing Forney's algorithm.

Claim [[11]]10 (Currently Amended): The method of claim [[8]]7, wherein the transforming step comprises:

- generating a non-transformed EDC syndrome;
- computing an EDC multiplier; and
- multiplying the non-transformed EDC syndrome by the EDC multiplier to generate the transformed EDC syndrome.

Claim [[12]]11 (Currently Amended): The method of claim [[11]]10, wherein the step of generating a non-transformed EDC syndrome generator comprises:

- receiving the data;
- providing clocked flip-flops;
- multiplying an output of the flip-flops with a value associated with the error detection code in the received data; and
- logically adding the multiplied output to the received data.

Claim [[13]]12 (Currently Amended): The method of claim [[8]]7 further comprising steps of:

- generating an error correction code (ECC) syndrome from the received data in an ECC syndrome generator.

Claim [[14]]13 (Currently Amended): The method of claim [[13]]12 wherein the ECC syndrome generator is connected to a comparator through an error correction unit.

Claim [[15]]14 (Currently Amended): The method of claim [[14]]13 wherein the error correction unit is connected to the comparator through an EDC syndrome recomparator.

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Claim ~~[[16]]15~~ (Currently Amended): A method for encoding data with an error correction code and error detection code comprising:

generating an error correction code for data using a first symbol size; and

generating an error detection code for the data using a second symbol size different from the first symbol size.

Claim ~~[[17]]16~~ (Currently Amended): The method according to claim ~~[[16]]15~~ wherein the first symbol size is h-bits and the second symbol size (g-bits) is twice the first symbol size.

Claim 17 (New): The method of claim 1, wherein the error detection code includes a first portion with a first symbol size and a second portion with a second symbol size, wherein the second symbol size is different from the first symbol size.